

HW (7.1 + 7.2 review)

$$\textcircled{2} 15^{3/4}$$

$$\textcircled{4} 11^{1/3}$$

$$\textcircled{6} (\sqrt[3]{10})^2$$

$$\textcircled{8} (\sqrt[7]{9})^4$$

$$\textcircled{10} 5\sqrt[4]{6}$$

$$\textcircled{12} 256$$

$$\textcircled{14} 25$$

$$\textcircled{16} \frac{1}{125}$$

$$\textcircled{18} 4^{13/6}$$

$$\textcircled{20} 5^{2/3}$$

$$\textcircled{22} 20250000$$

$$\textcircled{24} 16$$

$$\textcircled{26} 7^{3/10}$$

$$\textcircled{28} 2\sqrt[3]{2}$$

$$\textcircled{30} 7\sqrt[3]{x}$$

$$\textcircled{32} \sqrt[3]{b} - 2\sqrt[4]{b}$$

$$\textcircled{34} 8x^3b\sqrt[3]{xb}$$

$$\textcircled{36} 7x^2\sqrt{x}$$

$$\textcircled{38} \frac{1}{x^4}$$

$$\textcircled{40} 3xy\sqrt[4]{x^2y}$$

(40) $\sqrt[3]{81x^6y^5}$

Prime factorization of 81: $3 \cdot 3 \cdot 3 \cdot 3$

Prime factorization of x^6 : $x \cdot x \cdot x \cdot x \cdot x \cdot x$

Prime factorization of y^5 : $y \cdot y \cdot y \cdot y \cdot y$

Grouping factors into cubes:

 $(3 \cdot 3 \cdot 3) \cdot (x \cdot x \cdot x) \cdot (y \cdot y \cdot y) \cdot (x \cdot x) \cdot y$

Simplifying the cube root:

 $\sqrt[3]{(3^3)(x^3)(y^3)(x^2)y)} = 3xy \sqrt[3]{x^2y}$

$3x^2y^4 \sqrt[4]{x^2y}$

Warm Up: #4 - 6

$$\textcircled{4} \quad \sqrt[5]{\frac{1}{27}} = \frac{\sqrt[5]{1}}{\sqrt[5]{27}} = \frac{1}{\sqrt[5]{27}} \cdot \frac{\sqrt[5]{9}}{\sqrt[5]{9}} = \frac{\sqrt[5]{9}}{\sqrt[5]{27 \cdot 9}}$$

Prime factorization of 27: $27 = 3 \cdot 3 \cdot 3$
Prime factorization of 9: $9 = 3 \cdot 3$
Prime factorization of $27 \cdot 9$: $27 \cdot 9 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

$$\sqrt[2]{5} \cdot \sqrt[2]{5}$$

$$\frac{\sqrt[5]{9}}{3}$$

$$\begin{aligned}
 \textcircled{5} \quad \sqrt[4]{\frac{5}{8}} &= \frac{\sqrt[4]{5}}{\sqrt[4]{8}} \cdot \frac{\sqrt[4]{2}}{\sqrt[4]{2}} = \frac{\sqrt[4]{10}}{\sqrt[4]{8 \cdot 2}} = \boxed{\frac{\sqrt[4]{10}}{2}} \\
 &\quad \begin{array}{c} \swarrow \quad \downarrow \\ 2 \quad 4 \\ \swarrow \quad \downarrow \\ 2 \quad 2 \end{array} \quad \begin{array}{c} \swarrow \quad \downarrow \quad \swarrow \\ 2 \quad 2 \quad 2 \end{array}
 \end{aligned}$$

$$\textcircled{6} \quad \sqrt[4]{\frac{20}{4}} = \sqrt[4]{5}$$

13

$$\sqrt[6]{\frac{11}{8}}$$

7 $3\sqrt[5]{2}$

8 same

$$\sqrt[5]{2} - 7\sqrt[3]{2}$$

11 $zx\sqrt[5]{24xy^3}$

12 X

13 $\frac{\sqrt[6]{88}}{2}$

1 $\frac{3}{2}$

9 $4\sqrt[3]{2}$

10 $3xy\sqrt[4]{5x^3y^2}$

2 $3 \cdot 4^{8/5}$

3 $25^{4/3}$

WARM UP ANSWERS